

09/884,429 filed 06/18/2001
David Chazan, et al.
Reply to Final Office Action of 05/19/2006

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-12 (canceled)

13. (currently amended) A fabrication element comprising a body structure formed by bonding together at least a first and a second substrate, at least one of the first and second substrates having at least one venting element disposed therein or at least partially therethrough to vent bond voids between the bonded substrates, the venting element ~~having no not in fluid communication with functionalized regions any other component disposed on or through the first and second substrates of the fabrication element, wherein the at least one venting element thermally insulates at least a first portion of the body structure from at least a second portion of the body structure, thereby reducing thermal coupling between the first and second portions, and wherein the at least one venting element produces at least one stagnant vapor region that reduces convective transport between venting element surfaces.~~

14-27 (canceled)

28. (previously presented) The fabrication element of claim 79, wherein a volume of at least one of the plurality of venting cavities is at least about $1 \mu\text{m}^3$.

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29. (currently amended) A fabrication element comprising a body structure having a microchannel network disposed therein and a at least one-venting element channel disposed therein or at least partially therethrough, the microchannel network comprising a plurality of microchannels, the venting channel disposed along at least a portion of a side of one or more of the microchannels such that it does not intersect with any microchannel in the microchannel network ~~element having no fluid communication with functionalized regions of the fabrication element, wherein the at least one-venting element thermally insulates at least a first portion of the body structure from at least a second portion of the body structure, thereby reducing thermal coupling between the first and second portions, wherein at least one of the first and second portions further comprises at least one cavity disposed therein, wherein the at least one cavity comprises at least one microchannel network.~~

30. (previously presented) The fabrication element of claim 79, wherein each of the plurality of venting cavities is spaced at least about 10 μm apart from one another.

31. (previously presented) The fabrication element of claim 79, wherein each of the plurality of venting cavities is spaced at least about 5 μm from an edge of a nearest microchannel or a nearest port.

32. (canceled)

33. (currently amended) The fabrication element of claim 29, wherein the ~~venting element comprises at least one venting channel network, and wherein at least one venting channel of the at least one venting channel network is disposed along at least a portion of and substantially parallel to one or more sides of the one or more microchannels in the at least one microchannel network.~~

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34. (currently amended) The fabrication element of claim 29, wherein the ~~venting fabrication element further comprises at least one venting channel network, and wherein the at least one venting channel network comprises at least a first venting channel network, the venting channel comprising a portion of the first venting channel network, at least one venting channel of which is disposed proximal to a first side of one or more microchannels in the at least one microchannel network.~~

35. (currently amended) The fabrication element of claim 34, further comprising ~~at least a second venting channel network, at least one venting channel of which is disposed proximal to a second side of the one or more microchannels in the at least one microchannel network.~~

36. (currently amended) The fabrication element of claim 35, wherein the ~~venting channel of the first venting channel network and the at least one venting channel of the first and second venting channel networks are disposed substantially parallel to the one or more microchannels in the at least one microchannel network.~~

37. (currently amended) The fabrication element of claim 35, wherein the ~~venting channel of the first venting channel network and the at least one venting channel of the first and second venting channel networks terminate at least about 0.05 mm from an edge of a port when the one or more microchannels in the microchannel network fluidly communicate with the port.~~

38. (currently amended) The fabrication element of claim 35, wherein the ~~venting channel of the first venting channel network and the at least one venting channel of the first and second venting channel networks each comprises a width of at least about 5 μ m.~~

39. (original) The fabrication element of claim 35, wherein two or more venting channels in the first or second venting channel networks merge in regions where cross-sectional midpoints of the two or more venting channels are separated by at most about 50 μ m.

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40. (currently amended) The fabrication element of claim 35, wherein cross-sectional midpoints of the venting channel of the first venting channel network and the at least one venting channel of the ~~first and second~~ venting channel networks are each disposed at least about 60 μm from a cross-sectional midpoint of the one or more microchannels in the at least one microchannel network.

41. (original) The fabrication element of claim 40, wherein the one or more microchannels comprise a width of at least about 60 μm .

42. (original) The fabrication element of claim 35, wherein one or more edges of the body structure comprise at least a third venting channel network comprising one or more venting channels.

43. (original) The fabrication element of claim 42, wherein the one or more venting channels comprise widths of at least about 0.1 mm.

44. (original) The fabrication element of claim 42, wherein the one or more venting channels are disposed at least about 3 mm from the one or more edges of the body structure.

45. (original) The fabrication element of claim 42, wherein one or more venting channels of the first and second venting channel networks fluidly communicate with the third venting channel network.

46-77 (canceled)

78. (canceled)

79. (previously presented) The fabrication element of claim 29, wherein the venting element comprises a plurality of venting cavities.

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80. (previously presented) The fabrication element of claim 79, wherein a depth of at least one of the plurality of venting cavities is at least about 0.1 μm .

81. (currently amended) A fabrication element comprising a body structure formed by bonding together at least a first and a second substrate, at least one of the first and second substrates having at least one venting channel network disposed therein to vent bond voids between the bonded substrates, the venting channel network ~~having no fluid communication disposed in at least one of the first and second substrates such that it does not intersect with any other component disposed in~~ disposed in at least one of the first and second substrates such that it does not intersect with any other component disposed in ~~with functionalized regions of the fabrication element the first and second substrates.~~